

CLAIMS

What is claimed is:

Claim 1. A linear fastener system comprising:

a collet member having a base end, a top end, an inner engaging surface, and an outer tapered compression surface;

a compression ring member having a base end, a front end, a inner tapered compression surface, and an outer surface; wherein said inner tapered compression surface is constructed and arranged to cooperate with said outer tapered compression surface of said collet member;

wherein said inner tapered compression surface of said annular compression member is constructed and arranged for linear overlapping movement in relation to said outer tapered compression surface of said collet member between a first gripping position and a second release position, wherein said gripping position results in said cooperating tapered surfaces compressing said collet member thereby gripping the outer gripping surface of a shank member and wherein said release position results in expansion of said collet member thereby releasing said outer gripping surface of said shank member.

Claim 2. The linear fastener system of claim 1 including a shank member having an outer gripping surface, a first end, and a second end.

1 Claim 3. The linear fastener system of claim 1 wherein
2 said inner engaging surface is generally smooth.

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4 Claim 4. The linear fastener system of claim 1 wherein
5 said inner engaging surface is threaded.

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7 Claim 5. The linear fastener system of claim 1 wherein
8 said inner engaging surface is knurled.

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10 Claim 6. The linear fastener system of claim 1 wherein
11 said inner engaging surface has a conjugate shape in relation
12 to said outer gripping surface of said shank member.

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14 Claim 7. The linear fastener system of claim 1 wherein
15 said inner engaging surface has at least one inwardly depending
16 lip, wherein said inwardly depending lip is constructed and
17 arranged to cooperate with a conjugate surface on said outer
18 gripping surface of said shank member.

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20 Claim 8. The linear fastener system of claim 7 wherein
21 said inwardly depending lip is constructed and arranged to
22 cooperate with at least one snap ring groove.

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24 Claim 9. The linear fastener system of claim 7 wherein
25 said inwardly depending lip includes at least one conical

1 surface; wherein said outer gripping surface of said shank
2 member has a conjugate conical surface.

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4 Claim 10. The linear fastener system of claim 1 wherein
5 said first end of said shank member includes a tensioning
6 means; wherein said tensioning means is constructed and
7 arranged to allow said shank member to be tensilely loaded
8 prior to moving said annular compression ring member to said
9 engaging position in relation to said collet member.

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11 Claim 11. The linear fastener system of claim 10 wherein
12 said tensioning means includes at least two generally flat
13 surfaces.

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15 Claim 12. The linear fastener system of claim 10 wherein
16 said tensioning means includes at least one groove extending
17 around the circumference of said first end of said shank
18 member.

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20 Claim 13. The linear fastener system of claim 10 wherein
21 said shank member tensioning means includes at least one
22 internal bore extending inwardly from said first end along the
23 longitudinal centerline of said shank member.

1 Claim 14. The linear fastener system of claim 13 wherein
2 said internal bore includes threads.

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4 Claim 15. The linear fastener system of claim 13 wherein
5 said internal bore includes at least one groove extending
6 around the circumference of said internal bore.

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8 Claim 16. The linear fastener system of claim 10 wherein
9 said tensioning means includes a frangible stem, whereby said
10 frangible stem is severed from said first end of said shank
11 member when said first member reaches a predetermined tension.

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13 Claim 17. The linear fastener system of claim 1 wherein
14 said outer tapered compression surface of said collet member
15 and said inner tapered surface of said compression member are
16 constructed and arranged to maintain an interfitting
17 relationship in said release position.

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19 Claim 18. The linear fastener system of claim 1 wherein
20 said outer surface of said compression member includes at least
21 two wrench flats for increasing or decreasing the said tension
22 applied to said shank member.

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24 Claim 19. The linear fastener system of claim 1 wherein
25 said collet member is constructed of plastic.

1 Claim 20. The linear fastener system of claim 1 wherein
2 said collet member is constructed of copper.

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4 Claim 21. The linear fastener system of claim 1 wherein
5 said collet member is constructed of brass.

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7 Claim 22. The linear fastener system of claim 1 wherein
8 said collet member is constructed of bronze.

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10 Claim 23. The linear fastener system of claim 1 wherein
11 said collet member is constructed of aluminum.

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13 Claim 24. The linear fastener system of claim 1 wherein
14 said collet member is constructed of steel.

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16 Claim 25. The linear fastener system of claim 1 wherein
17 said collet member is constructed of rubber.

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